DOCUMENT RESUME

ED 401 459 CE 072 969

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TITLE Educational Reform Movements and Their Influence on Vocational-Technical Education in Taiwan.
PUB DATE Dec 96
NOTE 14p.; Paper presented at the American Vocational Association Convention (Cincinnati, OH, December 5-8, 1996).
PUB TYPE Viewpoints (Opinion/Position Papers, Essays, etc.) (120) -- Speeches/Conference Papers (150)

EDRS PRICE MF01/PC01 Plus Postage.
DESCRIPTORS *Educational Change; *Educational Improvement; *Educational Philosophy; *Educational Policy; Foreign Countries; Secondary Education; *Technical Education; Technical Institutes; Two Year Colleges; *Vocational Education
IDENTIFIERS *Taiwan

ABSTRACT

In recent years, educational reform movements and reports have appeared often in Taiwan. As a main avenue running parallel to general education, technological and vocational education (TVE) has been affected by a variety of claims made in those movements or reports. Some of the movements call for less competition to enter senior high schools, less-difficult examinations, less emphasis on "star" schools, and more even distribution of educational resources (educating the lower 80 percent, not just the top 20 percent of students). However, many calls for educational reform have not been based on a holistic perspective. As a result of the influence of educational reform, TVE has the following reform aims: (1) 1-year practical skills training will be added to the 9 years of compulsory education; (2) the ratio between the number of students in TVE institutions at the secondary level and the number of students in senior high schools will be adjusted from 7:3 to 5:5; (3) more pathways for entering advanced TVE study will be phased in; and (4) more postsecondary TVE institutions will be established and programs offered to improve access to the TVE system. (Author/KC)

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ED 401 459

Running head: VOCATIONAL-TECHNICAL EDUCATION IN TAIWAN

Educational Reform Movements and Their Influence on Vocational-technical Education in Taiwan

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Paper presented at
American Vocational Association (AVA) Annual Convention,
Cincinnati, Ohio, U.S.A.
December 5-8, 1996

CE072969

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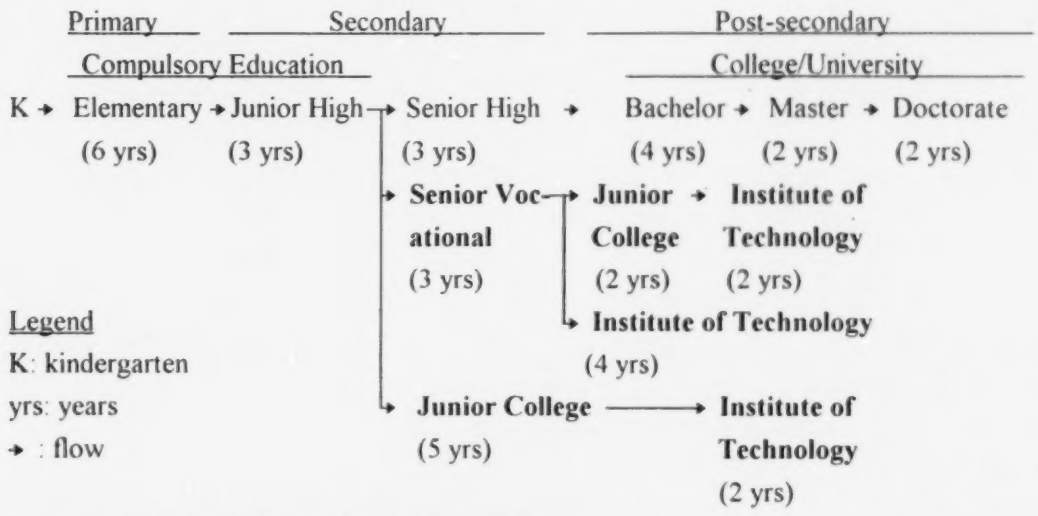
Abstract

In recent years, educational reform movements and reports have mushroomed like bamboo shoots after rain in Taiwan. As a main avenue running parallel to general education, technological and vocational education (TVE) has been certainly affected by a variety of claims made in those movements or reports. This paper describes and criticizes these educational reform movements and their influence on TVE. It is found that many calls for educational reform have not been based on a holistic perspective. It is also found that, as a result of the influence of educational reform, TVE has the following reform aims: (1) One-year practical skills training will be added to the nine-year compulsory education. (2) The ratio between the number of students in TVE institutions at the secondary school level and the number of students in senior high schools will be adjusted from 7:3 to 5:5. (3) More pathways for entering advanced TVE study will be phased in. (4) More post-secondary TVE institutions will be established and programs offered to improve access to the TVE system.

Educational Reform Movements and
Their Influence on Vocational-technical Education in Taiwan

The Republic of China on Taiwan (henceforth, called Taiwan) is now an affluent society and a democracy now. It is one of the six "Asian Dragons" or Dynamic Asian Economies (DAEs; the other five being Hong Kong, Malaysia, Singapore, South Korea and Thailand) and the 14th largest trading partner of the United States. On this island, Confucian values are still in vogue. People there not only hold on to family values, respect for elders, diligence and thrift, but also place a high value on education (Editorial, 1996c). Dedication to education is one of the key factors contributing to the rapid economic and democratic progress which Taiwan has achieved over the years.

The present school system in Taiwan is based upon the 6-3-3-4 system: six years in elementary school, three years in lower-secondary (i.e., junior high) school, three years in upper-secondary (i.e., senior high school or senior vocational) school, and typically four years in college or university. As shown in Figure 1, senior vocational schools, junior colleges, and institutes of technology in Taiwan primarily constitute the technological and vocational education (TVE, synonymous with vocational-technical education) institutions.


Primary
Secondary
Post-secondary
Compulsory Education
College/University
K → Elementary → Junior High → Senior High → Bachelor → Master → Doctorate
(6 yrs) (3 yrs) (3 yrs) (4 yrs) (2 yrs) (2 yrs)
→ Senior Vocational (3 yrs) → Junior College (2 yrs) → Institute of Technology (2 yrs)
→ Institute of Technology (4 yrs)
→ Junior College (5 yrs) → Institute of Technology (2 yrs)
Legend
K: kindergarten
yrs: years
→ : flow

Note: **TVE institutions** are shown in **boldface** type.
Figure 1. The school system in Taiwan.

As shown in Table 1 and Figure 2, in the 1994-95 school year, there were 643,288 students enrolled in upper-secondary TVE schools (523,412 in senior vocational schools and 119,876 in the lower three years of five-year junior colleges). That is, TVE students accounted for 71.6% of the total number of students in upper-secondary schools. The

upper two grades of five-year junior colleges, two-year junior colleges, three-year junior colleges, which are almost phased out, and both undergraduate and graduate programs in institutes of technology altogether had 297,434 students. In other words, TVE students accounted for 46.8% of the total number of students in post-secondary schools (Department of Technological and Vocational Education, 1996). In total, TVE students accounted for 61.3% of the total number of students in both upper- and post-secondary schools. Thus, beyond the nine years of compulsory education, TVE has been a main avenue running parallel to GE (general education, which main route is senior high school — college/university). The main route of TVE is either senior vocational school — two-year junior college — institute of technology or senior vocational school — four-year institute of technology. TVE in Taiwan has been often commended for its all-through (upper-secondary to post-secondary) system.

Table 1

A Comparison of the Number of Students between GE and TVE Schools in the 1994-95 School Year

	GE	TVE	Total	TVE %
Upper-secondary				
Senior High School	255,387	---	255,387	-----
Senior Vocational School	---	523,412	523,412	-----
Junior College (5 yrs)-Lower 3	---	119,876	119,876	-----
Subtotal	**255,387**	**643,288**	**898,675**	**71.6**
Post-secondary				
Junior College (5 yrs)-Upper 2	---	79,268	79,268	-----
Junior College (2 yrs)	---	195,121	195,121	-----
Junior College (3 yrs)	---	4,486	4,486	-----
College/University (Under.)	297,802	---	297,802	-----
Institute of Technology (Under.)	---	16,697	16,697	-----
Graduate	40,235	1,862	42,097	-----
Subtotal	**338,037**	**297,434**	**635,471**	**46.8**
Total	**593,424**	**940,722**	**1,534,146**	**61.3**

Note. "---" stands for " not applicable."

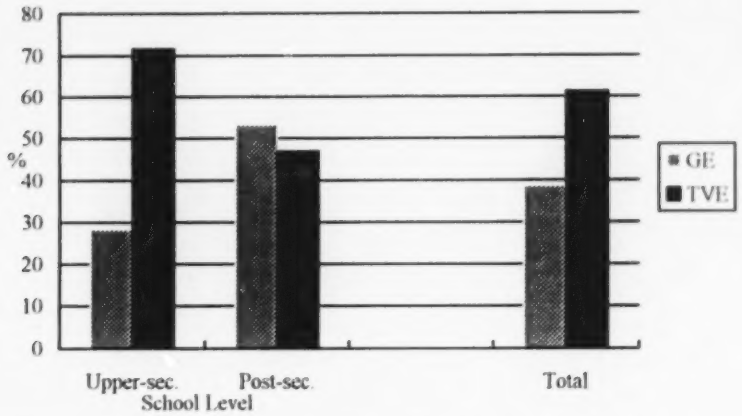


Figure 2. A comparison of the percentage of students in GE and that in TVE in the 1994-95 school year.

Entrance examinations, which are normally a kind of "bidding screening mechanism," in which candidates who obtain higher exam scores have higher priority in choosing schools, are required for admission to upper- and post-secondary schools. The entrance examinations for admission to some prestigious senior high schools and colleges/universities are very competitive. Tension rises as student approach to the two main entrance exams each year. This "pressure-cooker" educationai system produces secondary-school students who are expected to do well mostly in those subjects which are included in entrance exams and are based upon book learning. On the other hand, teachers are more and more inclined to regard teaching as only the imparting of book knowledge. Taiwanese call the attitude of thinking about nothing but entering a higher school and of paying no attention to the real purpose of education *sheng-shyue-juu-yih*, meaning diploma-disease. There are at least two effects which have resulted from *sheng-shyue-juu-yih*:

1. Students suffer under heavy study loads.

It is common practice for secondary-school students everywhere in Taiwan to spend a large part of their free time in cram schools (*bushiban*) which are found in all the cities, and their parents also spend a large part of their money there. This is all for the sake of education (Chen, 1996). A study done by the Taipei municipal government's Bureau of Education showed that 46% of students suffered from some degree of eyesight impairment in elementary school. That percentage rose to 77% in junior high school, and reached a high of 88% among senior high school students (Associated Press, 1996). Although the problem begins with watching too much televjsion and sitting too close to the TV set at

home, to the author's knowledge, it is worsened by the heavy study load, which forces students to strain to read Chinese complex characters. In addition, the number of people, especially members of the middle class, leaving Taiwan for permanent residence in other countries has been increasing year to year. Approximately 25,000 people actually leave the island yearly. The reasons why so many residents have been emigrating are complicated[1]. Many school-aged children and their parents have suffered from the great competition in entrance exams, and this is usually considered one of the main reasons.

2. The masses are ignored.

Current curriculum design and teaching concentrate on the brightest students and neglect the needs of the long trailing edge of underachievers. Thus, some criticizes that the educational system in Taiwan has devoted 80% of its attention to cultivating the elite, about 20% of the students, and neglected the masses, around 80% of the students (Lee, 1996). Additionally, between February 28 and April 18, 1996, a total of five college undergraduate and graduate students committed suicide because of pressure from schoolwork or disappointments in love. It is criticized that colleges and schools are concerned only with the development of specialized skills and abilities, and do little to develop a positive outlook on life among students (Editorial, 1996a).

The above two effects as result of *sheng-shyue-juu-yih* have become one of social problems in Taiwan. Chinese often says, "An ice layer three feet thick takes more than one cold day to form." This social problem has deep roots and is very knotty. Thus, calls for educational reform have been increasingly raised. The 410 Educational Reform Movement, begun on April 10, 1994, became the prologue to a series of recent-year movements in educational reform. Since then, calls for educational reform have pervaded the country, and the government has announced plans for reform in the country's educational system. TVE, as a main avenue running parallel to GE, has undoubtedly been affected by these educational movements. This paper describes and criticizes the major educational reform movements reports and their influence on TVE.

All Flowers Are in Bloom:
Calls for Educational Reform Have Pervaded the Country

On April 10, 1994, a group later called the 410 Educational Reform Alliance, comprised of more than two hundred of civic organizations and more than 10 thousand people, participated in a parade and a carnival party (Central Daily News, September 11, 1994) to support the following four proposals: (1) downsizing class size and school size, (2) increasing the number of senior high schools and colleges, (3) advancing educational modernization, and (4) formulating a fundamental education law. The Ministry of Education (MOE) agreed to the first three proposals and held the Seventh National

Educational Conference June 22-25, 1994. The following eight issues were discussed at this conference: (1) the distribution of educational resources, (2) revising schooling systems, (3) changing curriculum frameworks, (4) improving teacher preparation, (5) enhancing the quality of higher education, (6) promoting life-long education, (7) launching citizen sports programs, and (8) advancing cultural and educational exchange between Taiwan and mainland China (Ministry of Education, 1995). Several days before the national conference began, the 410 Educational Reform Alliance and a civil society *Cherng-Sheh* held an educational conference to challenge the national conference. This conference pointed out that educational authorities in Taiwan have inappropriately regulated the following eight areas: (1) private schooling, (2) teaching materials and curricula, (3) teacher qualifications, (4) the ratio between the number of senior-high-school students and the number of senior-vocational-school students, (5) tuition, (6) diplomas and enrollment, (7) the offerings of post-secondary programs, and (8) educational budgets. The conference also criticized that the workforce planning done by the government had distorted education and urged that downsizing of school sizes and class sizes be speeded up.

On January 25, 1995, the MOE published the Educational Report of the Republic of China on Taiwan, which was also called an educational white paper, to sketch out a plan for educational development and to explain the MOE's fundamental positions and future goals. In this white paper, the following five goals of educational reform were presented: (1) to relieve stress in the examination system, (2) to ensure equitable distribution of educational resources, (3) to facilitate educational liberalization, (4) to enhance educational quality, and (5) to disseminate the spirit of humanism (Ministry of Education, 1995). However, on March 11, 1995, the 410 Educational Reform Alliance and some other groups publicly criticized the white paper for failing to respond to public demands for educational reform. Thus, it seems that a seesaw battle exists between the 410 Alliance and the MOE.

On September 21, 1994, a cabinet-level Educational Reform Council was organized by the Executive Yuan and chaired by Dr. Yuan-tseh Lee, who was awarded the Nobel prize in chemistry and is the president of Academia Sinica. This council, originally consisting of 28 members and purposefully excluding teacher educators, was to work for two years with the goals of: (1) proposing an educational reform program and reviewing important educational development plans, (2) providing suggestions for and consultation on significant educational policies, and (3) offering suggestions to and reviews on related educational reform and educational development. After conducting a variety of activities such as seminars, council and sub-council meetings, study projects, auditions, and

newsletter publications, the council consecutively published three interim consulting reports on April 28, 1995, November 4, 1995, and June 28, 1996, and presented its fourth and final consulting report on October 5, 1996. In the four reports, deregulation is consistently urged by the council. In addition, in the final report, the following educational reform directions were strongly advocated: (1) implementing multi-value curricula, (2) ensuring small-class-size instruction, (3) establishing a behavioral guidance system for students, (4) facilitating multi-cultural education, (5) de-emphasizing "star schools," (6) establishing a compensative instruction system, (7) enhancing physical and mental retardation education, and (8) emphasizing aboriginal education.

Some educational reform reports or proposals were presented, but the three noted above were most influential. A summary of the assertions and goals of these three reports is shown in Table 2.

Table 2

A Brief Summary of Three Educational Reform Movements and Reports Since 1994

Movement or Report	Main Assertion or Goal
410 Educational Reform Alliance (April 10, 1994)	1. Downsize class size and school size 2. Increase the number of senior high schools and colleges 3. Advance educational modernization 4. Formulate an fundamental education law
Educational Report of the Republic of China on Taiwan, Ministry of Education (January 25, 1995)	1. Relieve stress in the examination system 2. Equitable distribution of educational resources 3. Facilitate educational liberalization 4. Enhance educational qualities 5. Disseminate the spirit of humanism
Final Consulting Report, Educational Reform Council, Executive Yuan (October 5, 1996)	1. Implement multi-value curricula 2. Ensure small-class-size instruction 3. Establish a behavioral guidance system for students 4. Facilitate multi-cultural education 5. De-emphasize "star schools" 6. Establish compensative instruction system 7. Enhance physical and mental retard education 8. Emphasize aboriginal education

In addition to the three educational reform reports mentioned above, President Teng-hui Lee, who received a doctoral degree from the Cornell University and is the first directly elected head of state in China's five-thousand-year history, determined that educational reform, with the aim of giving people a cosmopolitan outlook and enhancing the quality of human resources, should be one of five major reforms (the other four being judicial, administrative, financial, and constitutional reforms) (Chu, 1996). That is to say, Taiwan has made educational reform a national goal. However, the responsibility of responding to calls or manifestos for educational reform lies with the educational system.

Since the new minister of education, Dr. Jin Wu, who lived in the United States for over 30 years, was appointed in June of 1996, a series of reforms in this country's educational system has been announced by the Ministry of Education (MOE). He hoped President Lee would announce a "Great Educational Amnesty" so that a number of reform measures could be implemented. These reform measures include eliminating entrance exams for senior high school enrollment, requiring junior-high-school graduates to enroll in their area high schools, and simplifying the questions for the nationwide College Joint Entrance Examination (CJEE), etc. In other words, he wanted to relieve the pressure students experience in continuing to higher levels of education and in hopes of "giving students back to their families, giving youth back to students" (Chen, 1996). To sum up, the main educational reform aims announced by Minister Wu at least include: (1) to make enrollment in schools possible for 80% of all kindergarten-aged children by year 2000, (2) to shrink the first-grade class size to 35 students per class, (3) to abolish the entrance exam system for those seeking admission to senior high and senior vocational schools, (4) to institute bilingual education (mainly, the Chinese Classics should be taught in the Minnan and Hakka dialects as well as in Mandarin Chinese in secondary schools), (5) to establish a college in every city and county, (6) to simplify the CJEE, (7) to enable the candidates for the CJEE choose the fields of study they wish to major in but not which schools they wish to enter as most of them try to attend "star schools" (i.e., prestigious schools) under the current system, (8) to decrease the large disparity in tuition between private and public colleges, (9) to offer degree-conferring adult education programs, and (10) to decrease the national illiteracy rate to less than 2% (Editorial, 1996b; Lee, 1996). Regarding the third plan, admission to senior vocational schools will depend on students' performance during all three years or the last two grades of junior high school beginning in 1999 or 2000. According to preliminary planning, the current 17 zones in Taiwan offering separate entrance exams will be remapped into 16 school districts, and students will be admitted by schools in their demographic districts.

Minister Wu's above ideas, sometimes considered off-the-cuff remarks, have been so

numerous that the public has been confused. As a result, these ideas have been threatened by a wave of conservatism. Actually, taking a close look at the calls for educational reform urged in the educational reform reports, we may find that only a few proposals concerned TVE although it is a main avenue running parallel to GE. The efforts of activists in the public and cabinet-level educational reform camps have been impressive. However, most of the activists have limited experience and knowledge in pedagogy and intentionally exclude educational professionals from their team. Thus, they have usually diagnosed the problems in schooling systems from a pathological viewpoint, and have not prescribed the solutions to the problems from a physiological or holistic perspective. Thus, some professionals have criticized these solutions as "grubbing clay from east wall to fix the west wall" and "treating only where the pain is." They are also concerned that those educational reform aims could be "loud thunder before little rain" and even could have some negative effects. For example, since "deregulation" was vowed, school teachers' rights have been expanded but their responsibilities have not been correspondingly required.

Downsizing, Not Downgrading: Secondary Vocational Education Has to be Reengineered

As mentioned earlier, a few calls for TVE reforms were urged in the main educational reform reports and proposals. In line with the white paper presented by the MOE and Minister Wu's recent ideas, the educational reform aims related to TVE are as follows:

1. One-year practical skills training will be added on the nine-year compulsory education.

   Junior-high-school graduates who decide not to continue their education will be required to receive practical skills training in senior vocational schools or other institutions up to the age of 16.

2. The ratio between the number of students in TVE institutions at the secondary school level and the number of students in senior high schools will be adjusted from 7:3 to 5:5.

   Half of those junior-high-school graduates who decide to continue their education will enter senior high schools. The other half will enter senior vocational schools or five-year junior colleges. That is, the number of senior high schools or academic-oriented programs will be increased.

3. More pathways for entering advanced TVE study will be phased in.

   Occupational-oriented, unusually able and technically advanced students and in-service employees will have more pathways to use to enter TVE institutions for advanced study.

4. More post-secondary TVE institutions will be established and programs offered to improve access to the TVE system.

   More two-year junior colleges, two-year and four-year institutes of technology or

universities of technology will be founded to provide senior vocational school and junior college graduates with more opportunities for advanced study.

It is found that the above aims of TVE reform are a part of the comprehensive educational reform movement. If these aims can be accomplished, then post-secondary TVE has a bright future. However, it is obvious that secondary-level senior vocational education has to be downsized. Secondary vocational education has been expanding in Taiwan but its oversupply in terms of the number of schools and students is criticized. It has completed its main mission of occupational preparation education.

Since the school year of 1996, 18 senior high or vocational schools began to try out an American-style comprehensive high school system, which provides students with occupational-, general- and academic-oriented pathways. It is believed that many students in these comprehensive high schools will select academic-oriented pathways. In addition, more and more junior high schools have been reorganized into all-through high schools, which include lower- and upper-secondary students. Most all-through high schools choose to offer senior high school programs but not senior vocational programs. Thus, when the number of comprehensive high schools, all-through high schools and regular senior high schools has increased, more and more potential students to senior vocational schools will switch their pathways to academic-oriented programs or regular senior high schools.

That is to say, a seesaw battle already exists between the senior high schools and the senior vocational schools. In this battle, senior vocational schools are obviously at a disadvantage. Some TVE educators are concerned that secondary vocational education is entering the grave. To the author's knowledge, secondary vocational education in Taiwan really faces a severe challenge. In order to survive and play a pivotal role in developing an entry-level workforce for Taiwan's industries, secondary vocational education, mainly implemented in senior vocational schools, must bravely reform its teacher qualifications, teacher education, programs and curricula in order to effectively develop students' basic skills and employability. Similar to junior colleges, senior vocational schools should not only satisfy individuals' desires to improve their abilities and qualifications for the workplace, but they also should serve as stepping stones to junior colleges or institutes of technology. In addition, senior vocational schools must make more effort to offer further or continuing education.

Do Away with the Wagon Effect:
TVE Has to Hold a Competitive Edge to Enter the 21st Century

Social, economic, political and educational factors all interact to affect educational outcomes (McCade, 1995). Taiwan is confronted with both internal and external challenges. Internally, Taiwan needs more effective educational and training programs to develop its

abundant human resources. Externally, Taiwan has to maintain and promote its competitiveness[2] (ability to create wealth) in the global circumstances. In order to stay in the winner's circle, the best of education is always down to earth, not up in the sky. Many of the comprehensive educational reforms being sought are superficial. That is, they touch only the surface of the educational problems. TVE focuses on praxis, so TVE reforms should not be part of a "wagon effect"--drifting along with the fashion. Its reforms must be designed and implemented with prudence.

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Footnotes

[1] *The China Post* editorial on September 12, 1996, pointed out the following reasons

why so many residents in Taiwan have been emigrating: (1) endless military threats posed by mainland China , (2) annoying political strife, (3) mounting crime rates, (4) undesirable traffic conditions, and (5) serious air pollution.

[2]According to the International Institute for Management and Development (IMD), Taiwan ranked 18th among 46 in the IMD's 1996 international competitiveness report.